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It is noted that the pending claims are clearer than the originally filed claims, however, the claims are still very difficult to follow and are not written using claim language and structure as generally accepted in US patent practice. The Examiner has pointed out several vague and indefinite issues below.

REPEATED REJECTIONS

7. The 35 U.S.C. 103 rejections of claims 76-77, 83-85, 88-89, 93 and 96 as being unpatentable over Britton (US 4,454,184) in view of Rasmussen (US 4,039,364) are repeated for the reasons of record in the Office Action mailed 2 November 2006, page 5, paragraph 13.

Claim 76

The Examiner contends as follows:

Regarding claim 76, Britton (184) teaches a cross-laminate (FIGs 4 and 8, #11a and #12a) comprising at least one pair of two adjacent films A and B which are laminated together in sandwich relation (col. 6, ll. 23-26, multiple layers 3, 4, 5 and 6)

with the main direction of orientation in film A crossing the main direction of orientation in film B (FIGs 4 and 1 wherein #11a, #12a, #13a and #14a cross each other), and

the films each comprises a continuous main layer consisting of a polymer material (See col. 2, ll. 42-47 and FIG-4, continuous films of adhesive above and below the strands.)

on at least the mutually facing sides of the main layers a first surface layer of a different polymer material (See col. 2, ll. 42-47)

and interposed between each first surface layer and its main layer a second surface layer of a different polymer material (FIG-1 and col. 2, ll. 45-58),

the first surface layer on the main layer of each of the films A and B being a discontinuous layer (See Fig-1 wherein the strands are not a solid sheet thus discontinuous in the direction between the strands and wherein the adhesive is not discontinuous between the strands.), consisting of at least one array of coextruded thin strands with strands in the arrays of the two films arranged in crossing relation to one another (FIGs 4 and 1 wherein the strands cross each other) and obviously teaches wherein the lamination strength is highest at the strand crossing points as it is well known that strand crossing points have stronger lamination strength than non crossing point areas (col. 3, ll. 1-19), however, fails to expressly teach wherein each of the films A and B having an uniaxial or biaxial molecular orientation.

Fig 1, Fig 4 and Fig 8 of US 4,454,184 were displayed

However, Rasmussen (364) teaches wherein each of the films A and B having an uniaxial or biaxial molecular orientation (col. 6, ll. 1-5) for the purpose of producing durable tarps for heavy duty applications (col. 1, ll. 16-19).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to either uniaxially or biaxially orient the films as taught by Rasmussen (364) in Britton ('184) in order to provide durable tarps for heavy duty applications.

The phrase "separately coextruded" in claim 76, line 2, "at least partially by heating" in claim 76, line 3, "coextruded" in claim 76, line 14, claim 85, line 2 and "continuous extrusion" in claim 93, line 2 are **process limitations** in a product claim and hence not given any patentable weight since patentability of a product does not depend on its method of production (see MPEP § 2173.05(p)).

The phrase "selected to give high tensile strength" in claim 76, line 8, "the polymer material of said second surface layers being selected to control the lamination strength in the strand-free regions thereof and the polymer material of the strands being selected to control the lamination strength at the crossing points of the strand arrays" in claim 76, lines 16-20 are not given any patentable weight since the applicant is introducing non-structural **functional language** into the product claims (see MPEP 2173 (q)) and (See MPEP 2173.05(g)).

Applicant firstly notes that Britton ('184) relates to "sheet material comprising a first layer having a plurality of aligned spaced apart strands **disposed in and completely surrounded by a mass of an adhesive**, a second layer having a plurality of aligned spaced apart strands **disposed in and completely surrounded by a mass of an adhesive**." Britton ('184) at claim 1 and at Col. 1, ll. 48-63 (emphasis added). Thus, the discontinuous layers on the inner surface of the film, *e.g.*, strands in certain embodiments, are not responsible for bonding, as they are **completely surrounded** by an adhesive. It is the adhesive surrounding the strands that is responsible for the bonding.

On the contrary, the present invention relates to strong adhesive bonds formed at *loci* of intersecting discontinuous layers, *e.g.*, strands; one set of strands disposed on a surface of the film A and other set of strands disposed on an opposing surface of the film B. The bonds comprise point or spot bonds formed by melt bonding the strands at the intersecting *loci*. The cross-laminate of this invention can also include a second bonding layer that controls heat induced bonding between regions of the films A and B that are free of the discontinuous layer, where the second bonding layer is interposed between the films A and B and the discontinuous outer layers.

Britton ('184) simply disclosed no such structure. The Britton ('184) strands are completely surrounded or embedded in an adhesive material. The Britton structure simply does not support inter-strand bonding. In fact, Britton ('184) does not even suggest a laminate where the bonds are inter-strand bonding.

The addition of Rasmussen (US 4,039,364) does nothing to remove the deficiencies in Britton ('184). Although Rasmussen ('364) does disclose cross-laminates with uniaxially or biaxially oriented films, the combination of Britton ('184) and Rasmussen ('364) only gives rise to uniaxially or biaxially oriented films having fibers **disposed in and completely surrounded by a mass of an adhesive** as required by Britton ('184) and bonded through the adhesive.

Applicant repeats the arguments above regarding Britton ('184) here. While it is true that the lamination strength is as reported, the strength is due to adhesive bonding and not due to bonding at *loci* of intersection of the facing discontinuous layers, e.g., strands. Again, the fibers in Britton ('184) are fully encased in adhesive, and all bond occurs in the adhesive coating and not at the fibers, which never touch.

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

Claim 84

The Examiner contends as follows:

Regarding **claim 84**, Britton ('184) teaches wherein a cross-laminate comprising an assembly of a common film A having a main layer with a strand-formed first surface layer on both of its surfaces and a second continuous layer interposed between each the first surface layer and the main layer and two exterior films B each having on at least one of its sides a strand-formed first surface layer of each the exterior film B facing toward the common film A with the strands thereof bonded to the strands of the common film A (see col. 6, II. 23-26 and FIG-1 wherein an additional layer such A with a strand is placed on top of the laminate).

Applicant repeats the arguments above regarding Britton ('184) here. Again, the problem with Britton ('184) is that it does not disclose, teach or suggest disposing the discontinuous layers, e.g., strands, on the surface of the films and bonding the films at the intersections of discontinuous layer of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

Claim 85

The Examiner contends as follows:

Regarding **claim 85**, Britton ('184) teaches on at least one of its outer films, an exterior surface layer of a polymer material (col. 2, II. 42-58).

The phrase "**adapted to enhance a surface property of the laminate selected from its heat-sealing capability or its frictional properties**" in claim 85, lines 3-4 is not given any patentable weight since the applicant is introducing non-structural **functional language** into the product claims (see MPEP 2173 (q)) and (See MPEP 2173.05(g)).

Applicant repeats the arguments above regarding Britton ('184) here. Regardless of the surface coating, Britton ('184) does not disclose, teach or suggest disposing the strands on the

surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

Claim 88

The Examiner contends as follows:

Regarding claim 88, Britton ('184) teaches wherein the second surface layer includes an adhesion modifying material (col. 2, ll. 42-58).

The phrase "**to establish a blocking between the contacting mutually facing strand-free regions thereof**" in claim 88, lines 2-3 is not given any patentable weight since the applicant is introducing non-structural **functional language** into the product claims (see MPEP 2173 (q)) and (See MPEP 2173.05(g)).

Applicant repeats the arguments above regarding Britton ('184) here. Regardless of the surface coating, Britton ('184) does not disclose, teach or suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

Claim 89

The Examiner contends as follows:

Regarding claim 89, Britton ('184) obviously teaches wherein the first surface layer on at least one of the films A and B comprises at least two of the arrays of strands, and the strands of the differing arrays being interspersed with one another as such material has a appearance depending upon how viewed or processed (col. 2, ll. 25-58).

The phrase "**at least one of the two arrays being formed of a polymer material differing in appearance from another of the two arrays**" in claim 89, lines 4-5 is not given any patentable weight since the applicant is introducing non-structural **functional language** into the product claims (see MPEP 2173 (q)) and (See MPEP 2173.05(g)).

Applicant repeats the arguments above regarding Britton ('184) here. Again, Britton ('184) does not disclose films have strands disposed on their surfaces. The Britton ('184) are fully surrounded by adhesive – coated – incapable of directly fiber-to-fiber or strand-to-strand bonding. Britton ('184) simply does not disclose, teach or suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

Claim 93

The Examiner contends as follows:

Regarding **claim 93**, Britton ('184) teaches a lamination layer introduced between the films A and B to laminate the films in the sandwich relation (see FIG-4).

Applicant repeats the arguments above regarding Britton ('184) here. Regardless of the lamination layer, Britton ('184) does not disclose, teach or suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

8. The 35 U.S.C. 103 rejections of claims 79-82, 86, 90, 94-95, 97-98 and 100 as being unpatentable Britton (US 4,454,184) in view of Rasmussen (US 4,039,364) and Lappala (US 2,851,389) are repeated for the reasons of record in the Office Action mailed 2 November 2006, page 11, paragraph 15.

Claim 79

The Examiner contends as follows:

Regarding **claim 79**, Britton ('184) and Rasmussen (364) teach the laminate discussed above, however, fail to expressly disclose wherein the thickness of the strands in the first surface layer of each of the films A and B is not greater than 20% of the thickness of the respective film.

However, Lappala ('389) teaches that any suitable diameter strand may be used (See col. 2, l. 45, any suitable diameter can be used), which clearly changes the films/laminate ratio. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to select a strand with a diameter that provides the above thickness ratio as taught by Lappala ('389) for the purpose of providing a laminate that is light and strong (col. 1, ll. 25-28).

Applicant repeats the arguments above regarding Britton ('184) here. Again, the combination of Britton (184) and Rasmussen (364) does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*). The inclusion of Lappala ('389) does nothing to repair the deficiencies in either Britton (184), Rasmussen (364) or their combination. Therefore, the new combination also does not disclose, teach or even

suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

Claim 80

The Examiner contends as follows:

Regarding claim 80, Britton ('184) and Rasmussen (364) teach the laminate discussed above, however, fail to expressly disclose wherein the collective area of the strands in each of the first surface layers constitutes not more than 60% of the area of the respective film side.

However, Lappala (389) teaches that any suitable diameter strand may be used (See col. 2, l. 45, any suitable diameter can be used), which clearly changes the above area ratio. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to select a strand with a diameter that provides the above area ratio as taught by Lappala (1389) for the purpose of providing a laminate that is light and strong (col. 1, ll. 25-28).

Applicant repeats the arguments above regarding Britton ('184) here. Again, the combination of Britton (184) and Rasmussen (364) does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*). The inclusion of Lappala ('389) does nothing to repair the deficiencies in either Britton (184), Rasmussen (364) or their combination. Therefore, the new combination also does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

Claim 81

The Examiner contends as follows:

Regarding claim 81, Britton ('184) and Rasmussen (364) teach the laminate discussed above, however, fail to expressly disclose wherein the thickness increase in each of the films A and B at the locations where the strands are present is at most 20% of the film thickness in adjacent strand-free regions thereof.

However, Lappala ('389) teaches that any suitable diameter strand may be used (See col. 2, l. 45, any suitable diameter can be used), which clearly changes the thickness increase. Therefore, it would have been obvious to a person of ordinary

Regarding claim 98, Britton ('184) and Rasmussen (364) teach the laminate discussed above, however fail to expressly disclose wherein the first surface layer on each of the films A and B constitutes at the highest 5% of the volume of the corresponding film.

However, Lappala (389) teaches that any suitable diameter strand may be used (See col. 2, l. 45, any suitable diameter can be used), which clearly changes the volume. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to select a strand with a diameter that provides the above volume as taught by Lappala ('389) for the purpose of providing a laminate that is light and strong (col. 1, ll. 25-28).

Applicant repeats the arguments above regarding Britton ('184) here. Again, the combination of Britton (184) and Rasmussen (364) does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*). The inclusion of Lappala ('389) does nothing to repair the deficiencies in either Britton (184), Rasmussen (364) or their combination. Therefore, the new combination also does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

9. The 35 U.S.C. 103 rejections of claims 87, 91-92 and 99 as being unpatentable over Britton (US 4,454,184) in view of Rasmussen (US 4,039,364), Velazquez (US 5,614,297) and Cederblad et al. (US 6,204,207) are repeated for the reasons of record in the Office Action mailed 2 November 2006, page 16, paragraph 16.

Claim 87

The Examiner contends as follows:

Regarding claim 87, Britton ('184) and Rasmussen (364) teach the laminate discussed above, and Rasmussen (364) teaches the laminate wherein each of the films A and B of the main layer is selected from HDPE, LLDPE or a blend of the two (col. 13, ll. 3-7), and the strands in the first surface layers of the films is selected from a polymer which consists essentially of a copolymer of ethylene (col. 13, ll. 11-30), however, fail to expressly disclose wherein the continuous second surface layer is formed mainly of LLDPE in admixture with 5 - 25% of a copolymer of ethylene having a melting point or a melting range within the temperature range of 50 - 80°C, the strands having a melting point or a melting range within the temperature range of 50 - 100°C.

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that of the films as taught by Cederblad ('207) in Britton ('184) in order to produce a laminate with firm and light bonds.

Applicant repeats the arguments above regarding Britton ('184) here. Again, the combination of Britton (184) and Rasmussen (364) does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*). The inclusion of Velazquez (US 5,614,297) and Cederblad et al. (US 6,204,207) do nothing to repair the deficiencies in either Britton (184), Rasmussen (364) or their combination. Therefore, the new combination also does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

NEW REJECTIONS

Claim Rejections - 35 USC § 112

10. Claims 76-100 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner contends as follows:

There is **insufficient antecedent basis** for the following limitations: "the main direction of orientation in film A" and "the main direction of orientation in film B" in claim 76, line 5, "said films" in claim 76, line 7, "the mutually facing sides" and "said main layers" in claim 76, line 9, "first surface layer" and "its main layer" in claim 76, line 11, "the main layer of each of the films A and B" in claim 76, line 13, "the arrays" in claim 76, line 14, "the two films" in claim 76, lines 14-15, "said second surface layers" in claim 76, line 16, "the lamination strength" in claim 76, lines 16-17, "the strand-free regions thereof" in claim 76, line 17, "the polymer material of the strands" in claim 76, line 18, "the crossing points" in claim 76, lines 18-19, "the strand arrays" in claim 76, line 19, "the strand crossing points" in claim 76, lines 19-20, "the strands", "the respective arrays" and "their crossing points" in claim 77, line 1 of page 4, "the thickness" in claim 79, lines 2, "the thickness" in claim 79, lines 3, "the collective area" in claim 80, line 2, "the area" and "the respective film side" in claim 80, line 3, "the thickness increase" in claim 81, line 1, "the locations" in claim 81, line 2, "the film thickness" in claim 81, lines 2-3, "the distance" in claim 82, line 1, "the center-to-center of adjacent pairs of strands in each array" in claim 82, lines 1-2, "the lamination strength" and "the thin strands" in claim 83, line 2, "the strand-free regions" in claim 83, line 5, "the bonding strength" in claim 83, lines 5-6, "its sides" in claim 84, line 4, on page 5, "said common film A" in claim 84, lines 6-7, on page 5, "the strands thereof" and "the strands of said common film A" in claim 84, line 7, on page 5, "its outer films" in claim 85, line 2,

"the continuous second surface layer" in claim 87, line 4, "the strands in the first surface layers" and "said films" in claim 87, line 7, "the contacting mutually facing strand-free regions thereof" in claim 88, line 3, "said arrays of strands" in claim 89, lines 2-3, "said two arrays" in claim 89, line 4, "the differing arrays" in claim 89, line 6, "the volume of the corresponding film" in claim 90, lines 2-3, "the average melting point" in claim 91, line 2, "the strand-formed first layer" in claim 91, lines 2-3, "the average melting point of the polymer material of the main layer" in claim 91, lines 3-4, "the average melting point of the polymer material" in claim 92, line 2, "the strand-formed first layer" in claim 92, lines 2-3, "the average melting point of the polymer material of the main layer" in claim 92, lines 3-4, "said films" in claim 93, line 3, "the thickness of the strands" in claim 94, line 2, "the thickness of the respective film" in claim 94, line 3, "the thickness increase" and "the locations" in claim 95, line 2, "the film thickness in strand-free regions" in claim 95, line 3, "its sides" in claim 97, line 3, "its exterior surface" in claim 97, line 4, "the spacing" and "said pattern" in claim 97, line 6, "the coloured strands" in claim 97, line 8, "the depth of the corrugations" in claim 97, line 9, "the exterior surface" in claim 97, line 10, "the actual maximum thickness" in claim 97, line 11, "the volume" in claim 98, lines 2-3, "the corresponding film" in claim 98, line 3, "the average melting point of the polymer" in claim 99, line 2, "the strand-formed first surface layer" in claim 99, lines 2-3, "the average melting point of the polymer material which constitutes the main layer thereof" in claim 99, lines 3-4 and "the distance" in claim 100, line 1.

Clarification and/or correction is required.

Applicants have amended the claims and hope that the amendments address all of these 112 second paragraph rejection. Applicants, therefore, respectfully request withdrawal of these rejections. The rejections are not intended to narrow and indeed actually broaden the claims and do not give rise to an estoppel.

Claim Rejections - 35 USC § 103

11. Claim 78 is rejected under 35 U.S.C. 103(a) as being unpatentable over Britton (US 4,454,184) in view of Rasmussen (US 4,039,364) and Johnston (US 3,340,128).

Note, the rejection of dependent claim #78 is substantially the same as the rejection in the previous office action, but for the minor amendments to claim #78 presented in Applicant's Paper filed 13 April 2007.

Britton ('184) and Rasmussen (364) teach the laminate discussed above, however fail to expressly disclose wherein the polymer material of the strands of at least one of the arrays comprises coloration material in sufficient amount coloration or amount and coloration to render the strands visible through at least one side of the cross-laminate.

However, Johnston ('128) teaches wherein the polymer material of the strands of at least one of the arrays comprises coloration material in sufficient amount and/or coloration to render the strands visible through at least one side of the cross-laminate (*col. 24, l. 58*) for the purpose of providing a decorative motif (*col. 24, ll. 59-60*).

93, it is noted as discussed above, that Applicant does not claim strands bonded to strands, thus Applicant's argument is not germane to any issue at bar.

18. In response to Applicant's arguments (*p. 21, paras. 3-4 of Applicant's Paper filed 13 April 2007*) that Johnston ('128) does not repair the deficiencies of claim #78, it is noted that Applicant has not provided any analysis to support said conclusion.

19. In response to Applicant's arguments (*p. 21, para. 5 to p. 28, para. 5 of Applicant's Paper filed 13 April 2007*) that Lappala ('389) does not repair the deficiencies of claims 79-82, 86, 90, 94-95, 97-98 and 100, it is noted that Applicant has not provided any analysis to support said conclusions.

20. In response to Applicant's arguments (*p. 29, para. 2 to p. 30, para. 2 of Applicant's Paper filed 13 April 2007*) that Velazquez ('297) and Cederblad ('207) do not repair the deficiencies of claims 91-92 and 99, it is noted that Applicant has not provided any analysis to support said conclusions.

Applicant acknowledges that above statements.

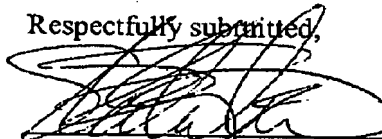
Having fully responded to the Examiner's Final Office Action, Applicant respectfully urges that is application be passed onto allowance.

The Commissioner is authorized to charge any claim charges or refund any overpayments associated with this response to Deposit Account 501518.

If it would be of assistance in resolving any issues in this application, the Examiner is kindly invited to contact applicant's attorney Robert W. Strozier at 713.977.7000

Date: August 7, 2007

Respectfully submitted,


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